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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,678	02/10/2004	Kurt von Figura	S2071-702810	3614
37462 7590 08/09/2010 LANDO & ANASTASI, LLP ONE MAIN STREET, SUITE 1100 CAMBRIDGE, MA 02142				
EXAMINER				
STEADMAN, DAVID J				
ART UNIT		PAPER NUMBER		
1656				
NOTIFICATION DATE		DELIVERY MODE		
08/09/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@LALaw.com  
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### Office Action Summary

**Application No.**

10/775,678

**Applicant(s)**

FIGURA ET AL.

**Examiner**

David J. Steadman

**Art Unit**

1656

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 86-96, 101-112 and 116-123 is/are pending in the application.
- 4a) Of the above claim(s) 91, 106 and 112 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 86-90, 92-96, 101-105, 107-111 and 116-123 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/13/10, 5/28/10
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Status of the Application***

- [1] Claims 86-96, 101-112, and 116-123 are pending in the application.
- [2] Applicants' amendment to the claims, filed on 6/2/10, is acknowledged. This listing of the claims replaces all prior versions and listings of the claims.
- [3] Receipt of information disclosure statements filed on 1/13/10 and 5/28/10, is acknowledged.
- [4] Applicant's remarks filed on 6/2/10 in response to the non-final rejection mailed on 12/28/09 have been fully considered and are deemed to be persuasive to overcome at least one of the rejections and/or objections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. Rejections and/or objections previously applied to claims 113-115 are withdrawn solely in view of the instant amendment to cancel these claims.
- [5] The text of those sections of Title 35 U.S. Code not included in the instant action can be found in a prior Office action.

***Election/Restriction***

- [6] Claims 91, 106, and 112 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

[7] Claims 86-90, 92-96, 101-105, 107-111, and 116-123 are being examined on the merits. Claims 96 and 111 are being examined only to the extent the claims read on the elected subject matter, *i.e.*, Iduronate 2-Sulfatase.

***Information Disclosure Statement***

[8] The information disclosure statement filed on 1/13/10 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The examiner has earnestly reviewed all application papers filed on 1/13/10, yet can find no copy of the document cited in the IDS.

[9] The information disclosure statement (IDS) submitted on 5/28/10 was filed after the mailing date of the first Office action on the merits on 12/28/09. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Claim Objection***

[10] The objections to claims 86, 101, 120, and 121 are withdrawn in view of the instant claim amendment.

***Claim Rejections - 35 USC § 112, Second Paragraph***

**[11]** The rejection of claims 86-90, 92-96, 101-105, 107-111, and 116-123 as being indefinite in the recitation of "activated form" is withdrawn in view of the instant claim amendment to delete this phrase from claims 86 and 101.

**[12]** The rejection of claims 86-90, 92-96, 101-105, 107-111, and 116-123 under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of "the endogenous sulfatase is activated by insertion of a strong promoter" and "the endogenous Formylglycine generating enzyme is activated by insertion of a strong promoter" is withdrawn in view of the instant claim amendment to delete the noted phrases from claims 86 and 101.

**[13]** The rejection of claims 86-90, 92-96, 101-105, 107-111, and 116-123 under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of "expression of the sulfatase is increased" and "expression of the Formylglycine generating enzyme is increased" is withdrawn in view of the instant claim amendment to delete the noted phrases from claims 86 and 101.

**[14]** The rejection of claim(s) 86-90, 92-96, 101-105, 107-111, and 116-123 under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of "exogenous sulfatase" and "exogenous Formylglycine generating enzyme" is maintained for the reasons of record and the reasons set forth below. The rejection was fully explained in a prior Office action. See [17] at p. 8 of the Office action mailed on 12/28/09.

RESPONSE TO ARGUMENT: Beginning at p. 10 of the instant remarks, applicant argues the term "exogenous" is a term of art in biotechnology and is not indefinite, particularly in view of the disclosure at pp. 11 and 39 regarding exogenous nucleic acid.

Applicant's argument is not found persuasive. The examiner acknowledges the use of "exogenous" with respect to a nucleic acid is art recognized in biotechnology. However, the term "exogenous" with respect to a nucleic acid is not at issue. The issue is the use of "exogenous" with respect to the recited sulfatase and Formylglycine generating enzyme (hereafter "FGE") that is "encoded by heterologous DNA introduced into the cell". As noted in the prior Office action, according to a common dictionary definition of "exogenous", the term means "introduced from or produced outside the organism or system" (Merriam-Webster online dictionary definition of "exogenous"). In view of this definition, the source of the "exogenous sulfatase" and "exogenous Formylglycine generating enzyme" is *outside* of the cell, *i.e.*, the "exogenous sulfatase" and "exogenous Formylglycine generating enzyme" comes from outside of the cell, *i.e.*, translocation of the "exogenous sulfatase" and "exogenous Formylglycine generating enzyme" into the cell from outside of the cell. As such, it is unclear as to how the cell expresses an "exogenous" sulfatase and FGE. It is suggested that applicant clarify the meaning of the claims by, *e.g.*, replacing "exogenous" in the phrases "exogenous sulfatase" and "exogenous Formylglycine generating enzyme" with "heterologous".

**[15]** Claims 86-90, 92-96, 101-105, 107-111, and 116-123 are newly rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is necessitated by the instant claim amendment.

Claims 86 (claims 87-90, 92-96, 116-117, and 120-121 dependent therefrom) and 101 (claims 102-105, 107-111, 118-119, and 122-123 dependent therefrom) recite the limitation "the gene encoding the endogenous sulfatase" and "the gene encoding the endogenous Formylglycine generating enzyme". There is insufficient antecedent basis for these limitations in the claims.

Applicant may argue there is only a single gene encoding an "endogenous" sulfatase and/or FGE of the cell and thus no antecedent basis issue. However, in view of a broad yet reasonable claim interpretation, an "endogenous" sulfatase and/or FGE can be encoded by extra-chromosomal DNA, *e.g.*, an expression vector. Based on a common dictionary definition of "endogenous", the term means "produced or synthesized within the organism" (Merriam-Webster online dictionary definition of "endogenous"). Thus, based on this definition, the endogenous sulfatase and/or FGE need only be produced or synthesized within the cell and does not require that the endogenous sulfatase and/or FGE be encoded by chromosomal DNA. Thus, while it is acknowledged "the gene" encodes the respective "endogenous sulfatase" or "endogenous Formylglycine generating enzyme", the "endogenous" sulfatase or FGE is not required to be encoded by the "gene" of the cell's chromosomal DNA and can be . Put another way, the cell can comprise multiple genes encoding an endogenous

sulfatase. Rather, the "endogenous" sulfatase or FGE can be encoded by extra-chromosomal DNA, e.g., an expression vector, as long as the sulfatase or FGE is produced within the organism. As such, it is unclear as to "the gene" that is recited in the claims.

**[16]** Claims 86-90, 92-96, 101-105, 107-111, and 116-123 are newly rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is necessitated by the instant claim amendment.

Claims 86 (claims 87-90, 92-96, 116-117, and 120-121 dependent therefrom) and 101 (claims 102-105, 107-111, 118-119, and 122-123 dependent therefrom) are confusing in the recitation of "the gene encoding the endogenous...comprises a heterologous promoter upstream of an endogenous sulfatase gene genomic locus" because it is unclear as to whether the heterologous promoter is within and part of the gene encoding the endogenous sulfatase or FGE, or whether it is upstream of the gene encoding the endogenous sulfatase or FGE. The recitation of "the gene encoding the endogenous...comprises a heterologous promoter" indicates the heterologous promoter is part of and within the gene encoding the endogenous sulfatase or FGE. However, the recitation of "upstream of an endogenous sulfatase gene genomic locus" indicates the heterologous promoter is *upstream* of the gene encoding the endogenous sulfatase or FGE and thus is not part of and not within the gene encoding the endogenous sulfatase or FGE. It is suggested that applicant clarify the meaning of the noted phrase.



***Claim Rejections - 35 USC § 101***

[9] The rejection of claims 86-90, 93-96, 101-105, 108-111, 113, 116, 118, and 123 under 35 U.S.C. 101 is withdrawn in view of the instant claim amendment to claims 86 and 101 to recite "the gene...comprises a heterologous promoter" with respect to the recited endogenous sulfatase and FGE and to recite "encoded by heterologous DNA" with respect to the recited exogenous sulfatase and FGE.

***Claim Rejections - 35 USC § 112, First Paragraph***

[17] The written description rejection of claims 86-90, 92-96, 101-105, 107-111, and 116-123 under 35 U.S.C. 112, first paragraph, is withdrawn in view of the instant claim amendment to recite, "the gene...comprises a heterologous promoter upstream of an endogenous...gene genomic locus" in claims 86 and 101 and to recite, "wherein the Formylglycine Generating Enzyme is an exogenous Formylglycine Generating Enzyme" in claims 92-94 and 107-109.

[18] The scope of enablement rejection of claims 86-90, 92-96, 101-105, 107-111, and 116-123 under 35 U.S.C. 112, first paragraph, is maintained for the reasons of record and the reasons set forth below. The rejection was fully explained in a prior Office action. See [19] beginning at p. 13 of the Office action mailed on 12/28/09.

The specification, while being enabling for an isolated sulfatase-producing cell expressing a sulfatase polypeptide and expressing an FGE polypeptide comprising

SEQ ID NO:2 or amino acids 34-274 of SEQ ID NO:2, wherein expression of FGE is achieved by: 1) transformation of a sulfatase-producing cell with an expression vector encoding an FGE polypeptide comprising SEQ ID NO:2 or amino acids 34-274 of SEQ ID NO:2 or 2) replacing the endogenous genomic FGE promoter with a heterologous promoter, wherein the FGE polypeptide modifies a catalytic cysteine to a formylglycine of the encoded sulfatase such that the ratio of active sulfatase to total sulfatase produced by the cell is increased up to 100% relative to a corresponding cell not expressing the FGE, does not reasonably provide enablement for all sulfatase-producing cells as broadly encompassed by the claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue." *In re Angstadt*, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976). Factors to be considered in determining whether undue experimentation is required are summarized in *In re Wands* (858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)) as follows: (A) The breadth of the claims; (B) The nature of the invention; (C) The state of the prior art; (D) The level of one of ordinary skill; (E) The level of predictability in the art; (F) The amount of direction provided by the inventor; (G) The existence of working examples; and (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure. See MPEP § 2164.01(a). The Factors considered to be most relevant to the instant rejection are addressed in detail below.

*The nature of the invention:* According to the specification, FGE is an enzyme responsible for post-translationally modifying a conserved cysteine residue in eukaryotes or a conserved serine residue in prokaryotes of a sulfatase polypeptide, yielding L-C-formylglycine, in which an aldehyde group replaces the thiomethyl group of the cysteine (p. 1, lines 20-29). The specification goes on to disclose that FGE can be used to enhance the activity of a sulfatase polypeptide (p. 3, lines 15-19).

*The breadth of the claims:* The claims are drawn to sulfatase-producing cells, wherein the ratio of active sulfatase to total sulfatase produced by the cell is increased relative to a cell without the FGE and the cell comprises:

(i) an endogenous or exogenous sulfatase, wherein the gene encoding the endogenous sulfatase comprises a heterologous promoter and the exogenous sulfatase is encoded by heterologous DNA introduced into the cell and

(ii) an endogenous or exogenous FGE comprising SEQ ID NO:2 or amino acids 34-374 of SEQ ID NO:2 or variants thereof as defined in claim 101, wherein the gene encoding the endogenous FGE comprises a heterologous promoter and the exogenous FGE is encoded by heterologous DNA introduced into the cell.

Regarding the term "exogenous" with respect to the recited sulfatase and/or FGE in claims 86-90, 92-96, 101105, 107-111, and 116-123, the term "exogenous" is commonly defined in this context as an object coming from outside of the system and is broadly and reasonably interpreted as encompassing a sulfatase and FGE that are produced *outside* of the cell. Yet the claims require that the exogenous sulfatase and FGE are encoded by heterologous DNA *introduced into the cell*.

Regarding claims 86-90, 93-96, 101-105, 108-111, and 116-123, when interpreted in light of the specification's disclosure at, e.g., p. 39, lines 28-30, the "sulfatase-producing cell" is interpreted as being a cell within a transgenic organism, e.g., a human transgenic organism.

*The state of the prior art; The level of one of ordinary skill; and The level of predictability in the art:* Regarding an exogenous sulfatase and/or FGE, the state of the art at the time of the invention acknowledges methods for increasing expression of a desired protein by recombinantly expressing the desired protein using an expression vector or and/or by promoter replacement, replacing an endogenous promoter with a heterologous promoter. However, there is no disclosure in the prior art of increasing expression of a sulfatase and/or FGE within a cell by producing the sulfatase and/or FGE outside of the cell.

Regarding the scope of sulfatase-producing cells encompassing cells of a transgenic human organism, the prior art acknowledges the unpredictability of gene transfer in an organism, particularly a human organism. See, e.g., Juengst (*BMJ* 326:1410-1411, 2003; cited in the PTO-892 mailed on 12/28/09).

*The amount of direction provided by the inventor and The existence of working examples:* The specification discloses the following working examples of a sulfatase-producing cell as encompassed by the claims, i.e., transformation of a host cell with an expression vector encoding a sulfatase and an FGE polypeptide of SEQ ID NO:2, or transformation of a host cell expressing an endogenous sulfatase with an expression vector encoding the FGE polypeptide of SEQ ID NO:2.

The specification fails to provide a working example or specific guidance regarding a cell that increases expression of a sulfatase and/or FGE within a cell by producing the sulfatase and/or FGE outside of the cell as encompassed by the claims.

Also, the specification fails to provide a working example of a transgenic human organism comprising a sulfatase-producing cell as encompassed by the claims. Further, the specification fails to provide any specific guidance for modifying a cell within a human organism to achieve overexpression of a sulfatase and an FGE.

The quantity of experimentation needed to make or use the invention based on the content of the disclosure: It was not routine in the art at the time of the invention to increase cellular expression of a sulfatase and/or FGE within a cell by producing the sulfatase and/or FGE outside of the cell, including a whole transgenic human organism.

Thus, in view of the overly broad scope of the claims, the lack of guidance and working examples provided in the specification, the high level of unpredictability as evidenced by the prior art, and the amount of experimentation that is required, undue experimentation would be necessary for a skilled artisan to make and use the entire scope of the claimed invention. Thus, applicant has not provided sufficient guidance to enable one of ordinary skill in the art to make and use the claimed invention in a manner reasonably correlated with the scope of the claims. The scope of the claims must bear a reasonable correlation with the scope of enablement (*In re Fisher*, 166 USPQ 19 24 (CCPA 1970)). Without sufficient guidance, determination of having the desired characteristics is unpredictable and the experimentation left to those skilled in the art is

unnecessarily, and improperly, extensive and undue. See *In re Wands* 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988).

RESPONSE TO ARGUMENT: Beginning at p. 12 of the instant remarks, applicant argues the scope of claimed sulfatase-producing cells as encompassed by the amended claims is fully enabled, noting that methods of introducing heterologous DNA into a cell are known in the prior art.

Applicant's argument is not found persuasive. At least for the reasons of record and those set forth above, the examiner maintains the position that the specification fails to enable the full scope of claimed sulfatase-producing cells.

***Claim Rejections - 35 USC § 102/103***

**[19]** The rejection of claims 86-90, 93-96, 101-105, 108-111, 113, 116-119, and 122-123 under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rommerskirch (reference U of Form PTO-892 mailed on 9/17/07) as evidenced by Dierks (cited in the IDS filed on 2/28/05) and Wraith (reference V of Form PTO-892 mailed on 4/1/09) is maintained for the reasons of record and the reasons set forth below. The rejection was fully explained in a prior Office action. See [21] beginning at p. 19 of the Office action mailed on 12/28/09.

RESPONSE TO ARGUMENT: Beginning at p. 13 of the instant remarks, applicant argues the reference of Rommerskirch fails to teach a sulfatase-producing cell as recited by the amended claims.

Applicant's argument is not found persuasive. As noted above and in the previous Office action, a common dictionary definition of "exogenous" is "introduced from or produced outside the organism" (Merriam-Webster online dictionary definition of "exogenous"). In accordance with *Ex parte Gray*, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989), the term "exogenous" with respect to the recited sulfatase and FGE is interpreted as a product-by-process limitation. Similarly, the recitation of "encoded by heterologous DNA introduced into the cell" with respect to the recited sulfatase and FGE is interpreted as a product-by-process limitation. According to MPEP 2113, "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."

As such, the phrases "exogenous" and "encoded by heterologous DNA introduced into the cell" with respect to the recited sulfatase and FGE, while limiting and defining the process by which the sulfatase or FGE polypeptide is produced, does not structurally or functionally distinguish the recited sulfatase and FGE over the sulfatase and FGE of normal human fibroblasts of Rommerskirch. As such, the examiner maintains the position that the normal human fibroblasts of Rommerskirch anticipate the claimed sulfatase-producing cell since: 1) Rommerskirch teaches normal human fibroblasts have increased expression of STS (a sulfatase) relative to chromosome X-linked-ichthyosis fibroblasts, *i.e.*, normal human fibroblasts have increased expression

of sulfatase as compared to expression in the "same cell type", *i.e.*, fibroblasts, of the sulfatase; 2) As evidenced by Dierks, human FGE is expressed in fibroblasts and human FGE expressed in fibroblasts is 100% identical to SEQ ID NO:2 herein; and 3) multiple sulfatase deficiency (MSD) fibroblasts are defective in FGE and exhibit <0.05nmol/hr/mg STS activity relative to normal human fibroblasts that produce FGE and exhibit 1.4 nmol/hr/mg STS activity, which is evidence that normal human fibroblasts have active sulfatase activity that is 100% greater than sulfatase activity of human fibroblasts in the absence of FGE.

### ***Conclusion***

**[20]** Status of the claims:

- Claims 86-96, 101-112, and 116-123 are pending.
- Claims 91, 106, and 112 are withdrawn from consideration.
- Claims 86-90, 92-96, 101-105, 107-111, and 116-123 are rejected.
- No claim is in condition for allowance.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Steadman whose telephone number is 571-272-0942. The examiner can normally be reached on Mon to Fri, 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath Rao can be reached on 571-272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David J. Steadman/  
Primary Examiner, Art Unit 1656